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Communication Strategies to Promote Infection Control Compliance: My Health is in Your Hands

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Abstract

Problem: The facility has less than 70% adherence to handwashing hygiene every week. Moreover, staff does not comply with the required PPE, affecting their infection-control performance and compliance to circumvent COVID-19. Furthermore, the microsystem lacks information flow and communication systems focusing on hand hygiene, and PPE usage significantly affects the healthcare staff's ability to perform such vital practices.

Context: Herman Health Care Center provides multiple services to its residents depending on medical needs after patient hospitalizations, such as short-term rehabilitation and long-term skilled nursing services. The COVID-19 pandemic had a remarkably negative impact on the skilled nursing facility. The project's motivation is to create a communication tool such as SBAR to improve adherence percentage of hand hygiene and PPE use, a vital component of infection prevention and control practices to halt the chain of transmission of COVID-19 infection.

Intervention: The proposed quality improvement project will utilize the CDPH healthcare-associated infection adherence tool for hand hygiene and contact precaution for PPE use in the chosen nursing unit. Moreover, the project will adapt communication strategies, such as the SBAR tool, to improve hand hygiene adherence and PPE use.

Measures: Actual observation of the PPE use and hand hygiene compliance of involved staff will measure interventions and serve as the benchmark to determine the project's success.

Result: The quality improvement project interventions significantly increased staff compliance to improve hand hygiene with 70-92% and PPE use from 78 to 85% in the chosen facility unit.

Conclusion: SBAR tool and team staff collaboration can significantly improve staff adherence to hand hygiene and the proper utilization of PPE, required to circumvent the transmission of COVID-19 in Herman Health Care Center.

Introduction

Changes are constant in the healthcare system, especially in improving infection control and prevention approaches and practices. Thus, communication is the foundation of health care. Competent communication promotes collaboration by empowering clinical staff to deliver critical information, especially in infection control and prevention policies and procedures. The Herman Health Care Center is a for-profit, corporate-owned skilled nursing and long-term care facility servicing the community in the San Jose area since 1944. The facility renders various services to its residents depending on medical needs after patient hospitalizations, such as short-term rehabilitation (physical, speech, and occupational therapy) and skilled nursing services teamed with nurses, certified nursing assistants, and ancillary workers. The COVID-19 pandemic had a vastly negative impact on the skilled nursing facility, with extensive outbreaks affecting residents and healthcare workers. Due to the resident population with advanced age and various underlying diseases, it represents a vulnerability that necessitates stringent protective measures and practices against the contamination and transmission of SARSCOV-2 that causes COVID-19. However, the facility's ineffective communication to improve infection control practices,

such as hand hygiene and the importance of personal protective equipment (PPE), will affect healthcare workers' overall compliance in combating the COVID-19 infection and may cause an outbreak in the facility.

Communication is the lifeline of a functional organization and facilitating a coordinating instrument for teamwork (Agency for Healthcare Research and Quality, 2019). Researchers recognize that communication and teamwork are fundamental processes in rendering quality health care and ameliorating patient safety. Clinical staff collaboration can improve hand hygiene and proper utilization of personal protective equipment needed to circumvent the outbreak of COVID-19 in the facility. The proposed project aims to build strategies, standardizing communication by adopting TeamSTEPPS' training programs centered on clinical staff communication systems and teamwork following excellent infection control practices. Hence, building strategies is a cost-efficient, essential factor in patient safety and quality care, as the project's trademark is "My Health is in Your Hands."

Problem Description

The microsystem assessment tool (MAT) is an excellent method to use in assessing clinical microsystems, suggesting how to integrate the fundamental practices to improve its comprehensive and structured performance, and focusing on quality care outcomes and patient safety. The Herman Health Care Center has 99 federally certified beds in three residential buildings on a 2.5-acre estate. The Santa Clara County COVID-19 Long-Term Care Facility (LTCF) Dashboard provides data on cases among residents and staff, including Herman Health Care Center, with an overall amount of 23 COVID-19 cases in the last 28 days (Santa Clara County Public Health, 2021). This information indicates the need to strengthen and increase

compliance in infection control practices such as handwashing hygiene and to follow proper donning and doffing of PPE.

Based on the microsystem assessment, the facility has less than 70% adherence to handwashing hygiene every week. Moreover, some staff do not comply with the required PPE, affecting their infection-control performance and compliance. Also, a lack of information flow and communication systems focusing on hand hygiene and PPE usage significantly affects the staff's ability to perform such vital practices. Comprehensive Infection Prevention and Control (IPC) policies should be established in the microsystem and adhered to, protecting the vulnerable residents with high risk for COVID-19-associated morbidity and mortality (Lai et al., 2020).

Available Knowledge

The recent percentage of facility compliance regarding hand hygiene and PPE use is the baseline of this project. Monitoring and measuring the adherence to evaluate facility performance inspired the creation of the following PICOT (population, intervention, comparison, outcome, and timeframe) question: How do (P) health care workers (I) employ communication strategies to (C) increase compliance for hand hygiene and PPE use to (O) reduce COVID-19 infection in a long-term care facility during the (T) time of pandemic?

A thorough data search was conducted electronically, and the literature was reviewed to support communication strategies to promote infection control compliance, such as hand hygiene and PPE use, utilizing Cochrane and PubMed databases. The leading search strategy used combinations of keywords including Improving Communication of Hand Hygiene Adherence, Adherence with Infection Prevention and Control, Communication Strategies, Personal Protective Equipment (PPE) Compliance During COVID-19, Transmission of COVID-19, PPE

use preventing COVID-19, and Infection Control Procedure in Long Term Care Facility. Limitations were placed to cover English-only articles with publication dates no earlier than 2011. The articles have chosen to review communication strategies to promote infection control compliance, such as hand hygiene and PPE use. Six studies with different research designs met the selected criteria to comprise this review.

Durso et al. (2021) conducted a randomized controlled trial (RCT) to evaluate the effectiveness of the World Health Organization (WHO) hand-rub diagram. Moreover, researchers modified the WHO hand diagram and compared the redesigned diagrams with the WHO version in a randomized group design. Coverage comprised 72 hand areas evaluated from various UV photographs.

The WHO diagram exhibited many shortfalls in hand-surface coverage during hand hygiene, including inadequate coverage with up to 75% of participants, specifically in the ulnar edge region. Hence, the redesigned, improved WHO diagram has adequate coverage of hand areas with 14% of participants, compared with 7% for the WHO original diagram. The study suggests that designing an improved diagram is effective in the prevention of healthcare-associated infections. WHO emphasizes that hand hygiene is the standard effective precautionary measure in preventing the spread of COVID-19 infection.

Houghton et al. (2020) examined 36 related studies and sampled 20 pieces of research to analyze barriers and facilitators to healthcare workers' adherence to IPC guidelines, particularly in PPE strategies. The study affirmed that the healthcare staff is subject to numerous factors that influence their compliance with the IPC guidelines when working on COVID-19 cases. Clear communication strategies for IPC guidelines are necessary to increase adherence to PPE

procedures. The study asserted that excellent workplace culture and proper training techniques would increase compliance to PPE use.

Ong et al. (2013) performed a crossover RCT concerning communication during inpatient transfers within hospital departments, which were implemented to enhance compliance to infection control precautions. Three hundred transfers were observed for four months. Two communication strategies were implemented, such as a pre-transfer checklist used by radiology transporters to verify a patient's infectious status and a colored cue to highlight written infectious status information. The control adherence percentage was 38%. Utilizing the colored cue has a compliance rate of 73%, while the pre-transfer checklist intervention achieved an equivalent rate of 71% adherence.

Moreover, the utilization of the two interventions improved the compliance rate by 74%. The research affirmed the significance of effective communication in improving compliance with infection control precautions during care transition. Both interventions provided a notable improvement when adhering to infection control precautions.

The COVID-19 pandemic became a global public health emergency that predominantly affects the long-term care facility, leading to the increased mortality rate for residents 60 years of age and above, highlighting their vulnerability. Rios et al. (2020) examined nine clinical practice guidelines (CPGs), suggesting a strategy in preventing facility outbreaks of the COVID-19 infection. Performing surveillance and evaluating IPC performance in long-term care facilities will support the prevention of COVID-19 transmission by mandating PPE use and promoting hand hygiene.

Verbeek et al. (2020) conducted a systematic review to support proper PPE use to prevent the spread of highly infectious diseases among healthcare staff. Healthcare workers utilize PPE for protection from COVID-19 infection through droplets and contact transmission. The researchers combined and appraised 24 studies with 2278 participants. The research proves that PPE can decrease the risk of contracting highly infectious diseases among healthcare workers. The study is unclear on the most reliable kind of PPE, the best donning and doffing method for PPE, and the training needed for healthcare workers. The researchers suggest a randomized controlled trial concerning the training aspect for PPE and simulation studies to determine which PPE and procedure provide the best protection.

The experts suggest that communication is an essential component in every nursing process, be it in performing interventions, providing education, or promoting health (Kourkouta & Papathanasiou, 2014). Moreover, learning the many aspects of communication in different nursing fields, such as infection prevention and control compliance, is necessary to manage the COVID-19 pandemic in long-term care facilities.

Rationale

The author developed the Integrated Theory of Health Behavior Change (ITHBC) and started from a systematic review of the literature—ten years of peer-reviewed published research on interventions intended to facilitate health behavior change principles. Polly Ryan developed the ITHBC by integrating concepts foundational to identified interventions that resulted in changing health behaviors influenced by several methods, including health behavior change theories. According to Ryan (2009), the framework of the ITHBC suggests that behavior change

can enhance desired health conditions by combining knowledge and beliefs, building self-management skills and abilities, and improving social facilitation.

Midrange theories focused on specific phenomena relevant to behavior change to promote positive outcomes. It shapes individual behavior response of their condition or treatment provided by clinicians, fostering theories and evidence-based interventions. Furthermore, the study supports the use of Midrange theory to incorporate knowledge and derived it from the work of advanced practice nurses and clinical nurse specialists. Theory-based practice decreases confusion and irrelevant information and facilitates "practice wisdom" while serving clients with health behavior modification.

Behavioral theories hold a significant role in managing the effects of an infectious public health emergency, such as the COVID-19 pandemic. The study presents a combination of review literature, discussing the application of behavior change theories that can relate to the health care provider's response in the context of increasing compliance of infection control practices such as hand hygiene and PPE use. Moreover, using theories that promote enhanced communication strategies with other methods enhances complex infection control requirements will provide holistic and comprehensive care in providing patient and staff safety against COVID-19 infection.

Specific Project Aim

The specific project aims to build communication strategies to improve hand hygiene adherence and PPE use from 70% to 100% of compliance in chosen facility unit by the end of July 2021. A timeline will further conclude if the improvement project is feasible for adoption and expansion is reasonable on a bigger scale in the microsystem.

Context

Changes are constant in the healthcare system, especially in improving approaches and practices in the nursing arena. The microsystem assessment tool is a powerful method to assess and ensures that the microsystem significantly improves its comprehensive and structured performance with quality outcomes when the changes are introduced in a unit.

Purpose. Herman Health Care Center renders various services to its residents depending on medical needs after patient hospitalizations, such as short-term rehabilitation (physical, speech, and occupational therapy) and skilled nursing services that are teamed with registered nurses and licensed vocational nurses who provide 24-hour care. The facility's commitment is to give a superior quality of life that signifies resident-centered care and individual decision-making, with family involvement in each clinical program designed to achieve individual resident care plan goals. As the facility offers long-term care placement, most of the resident population is 50 years of age and older, with an estimation of 97% in its total census. Moreover, the remaining 3% of its population is 50 years of age and younger, with an indication for short-term stay and possible discharge after completing the rehabilitation program. The COVID-19 pandemic had a remarkably negative impact on the skilled nursing facility, affecting healthcare workers and residents due to advanced age with various underlying diseases, representing a vulnerability that necessitates strict infection prevention and control (IPC) interventions.

Patients. Based on the facility profile, the resident population has more than one underlying condition that affects the residents' ability to carry out essential self-care tasks, therefore necessitating continuous care and support to maintain or achieve optimal functioning and safety. Due to the diversity of the residents' health issues, the facility offers prospective

admission for individuals with mental health problems that require rehabilitation and skilled nursing services.

Professionals. Every nursing unit in the microsystem is composed of licensed nurses, certified nursing assistants, and other disciplinary teams who are expected to work at least eight hours per shift within 24 hours performing hand hygiene and required PPE use. Moreover, due to licensed nurse staffing variation, license vocational nurses represent a higher percentage in the workforce than registered nurses. The facility staffing measures include staffing hours per resident per day (HPRD) and skill mix to comply with state staffing regulations and promote patient quality of care and safety based on the diversity of needs of residents that have to be met (Rome & Harris-Kojetin, 2019). The connection between staff and various quality standards changes from time to time. Given such variations, the microsystem has less turnover and higher retention rates.

Process. The microsystem IPC processes in the chosen unit begin with the new resident's admission, including cohorting in the observation unit (yellow zone), requiring a strict protocol for hand hygiene and PPE usage according to the enhanced transmission-based precautions (Droplet and Contact) indicated for managing COVID-19. After the resident completes isolation days in the yellow zone without presenting COVID-19 signs and symptoms, they will transition to the green zone. Thus, a lower requirement for PPE use is needed, but hand hygiene is still strictly implemented. However, if the resident is confirmed positive, they will be transferred to the red zone. The transmission-based precautions are the same as in the yellow zone. Moreover, staff will be designated permanently to the unit until the resident completes the isolation days recommended by public health guidelines. The clinical staff needs to demonstrate excellent IPC

intervention skills and enhance adherence to prevent the spread of COVID-19 while performing clinical processes and delivering appropriate care to the resident, thereby decreasing rehospitalization rates and ensuring patient safety and a safe working environment for the staff.

Patterns. According to the unit profile, the microsystem unit's communication patterns for IPC practices within care providers significantly affect the compliance for hand hygiene and PPE use while providing quality care and patient safety during the pandemic. The clinical staff is experiencing challenges reporting concerns while performing the core elements of IPC practices due to a lack of information flow and communication systems. Moreover, the facility's lack of IPC communication patterns might affect the overall effectiveness in mitigating the spread of COVID-19 infection in the facility. One of the project's motivations is to create a communication tool such as SBAR to increase adherence percentage of hand hygiene and PPE use, an essential component of infection prevention and control practices to prevent the spread of COVID-19 infection.

Intervention

Infection Prevention and Control (IPC) intervention are one of the essential strategies in preventing and mitigating COVID-19 infection in skilled nursing facilities. Moreover, following excellent hand hygiene and proper use of required PPE is one of the core elements in combating the transmission of the SARS-COV2 in a skilled nursing facility. Facility staff education plays a vital role in maintaining IPC policies and procedures and adhering to the national standard and evidence-based approaches in managing COVID-19 infection.

Learning objectives will serve as a framework for planning, implementing, and evaluating the TeamSTEPPS educational plan. Moreover, this teaching plan includes the three domains of

learning: cognitive, psychomotor, and affective learning. The learners comprise an interdisciplinary team, including nurses, CNAs, housekeeping, and other staff providing resident care on a day-to-day basis. The projects intervention objectives are as follows:

- The multidisciplinary team will recognize the importance of hand hygiene compliance and proper use of required PPE in supporting COVID-19 enhanced transmission-based precautions in the skilled nursing facility.
- The interdisciplinary team will comply with and demonstrate the appropriate way of donning and doffing the PPE recommended by the Centers for Disease Control and Prevention (CDC) when caring for patients with confirmed or suspected COVID-19.
- The learner will be able to adhere to hand hygiene and PPE usage at every opportunity and identify challenges by reporting to the project team leader by utilizing the SBAR communication tool between the staff (see Appendix F).
- The team will follow hand hygiene techniques according to the facility hand hygiene skills check to maintain the competency needed for standardized hand hygiene practices in mitigating the spread of COVID-19 infection.
- The team will develop the confidence to increase hand hygiene and PPE compliance and mentor colleagues by accurately demonstrating an excellent IPC skillset.

The Infection Preventionist (IP) will be the project team leader assigned to supervise the project's implementation, including planning, developing, organizing in-services, implementing, evaluating the educational plan, and coordinating with involved staff. The project's implementation will start with a meeting of the infection control committee. The agenda is to identify the facility's culture concerning change and quality improvements and the staff learning

method. Moreover, collecting data such as current facility hand hygiene and PPE usage adherence percentage will serve as a baseline to measure the project's progression. Thus, infection control meeting minutes will be scheduled every Friday to monitor project outcomes and identify the barriers that can be altered to meet the desired goals.

The IP will conduct in-services by showing video content on proper hand hygiene techniques and the personal protective equipment (PPE) donning and doffing competency checklist based on the CDC standards from the COVID-19 Infection Prevention and Control (IPC) program. Moreover, the chosen unit staff will do a return demonstration to evaluate the required skills by utilizing the facility competency checklist (see Appendix B and C). To measure adherence to hand hygiene and PPE use, the infection control committee member will be utilizing the California Department of Public Health (CDPH), healthcare-associated infections program adherence monitoring for hand hygiene and contact precaution at every opportunity (see Appendix D and E).

The team leader will provide a paper printout of the SBAR tool template to communicate critical information, such as hurdles related to IPC performance that require immediate action. Moreover, team staff will receive training regarding the purpose of SBAR and how to complete the form correctly. The IP will conduct a weekly meeting with all staff involved in the project to encourage discussion of the significance of the Integrated Theory of Health Behavior Change (ITHBC). This approach will help to identify individuals' beliefs about the project and integrate the available evidence-based knowledge concerning the effect of hand hygiene and PPE use on mitigating COVID-19 in the workplace. Thus, behavior change will support the staff to increase compliance with such infection control practices.

Study of the Intervention

In achieving proposed outcomes with 100% compliance with IPC practices such as hand hygiene and PPE usage, staff support from the planning and building stages is vital. The project team leader chose the staff showing good infection control practices in the facility to be a member of the infection control champion. The infection control champion will assist in monitoring the compliance of the involved staff in the nursing unit using the CDPH healthcare-associated infection adherence tool for hand hygiene and contact precaution for PPE use procedures. Moreover, the adherence tool provides calculation instruction to evaluate the percentage to deliver the project's intervention measures. The compliance is monitored every week by installing a data wall that will help see the journey of the daily, weekly, and monthly metrics toward the target date's performance. SBAR is utilized, and the staff members can communicate effectively when hurdles and concerns arise.

Measures

Healthcare staff compliance for hand hygiene and proper use of PPE has been recognized as the most effective means to overcome the spread of pathogens in health care facilities. However, the skilled nursing facility's adherence to hand hygiene and PPE use has shown a lower percentage, and improvement efforts are needed to ensure sustainability. Observation of the PPE use and hand hygiene compliance of involved staff will serve as the benchmark for the project's measurement.

Observation allows seeing the thoroughness of hand hygiene and PPE, including techniques and moments in every opportunity. This method provides infection control champions to see staff who adhere to such guidelines and individuals who are not performing procedures by giving

prompt feedback and education when correction is needed. Furthermore, direct observation assists the team in assessing unit-specific determinants that may affect PPE usage and hand hygiene guideline adherence. The team will measure compliance by utilizing the California Department of Public Health (CDPH), healthcare-associated infections program adherence monitoring for hand hygiene and contact precaution (see Appendix D and E). The IP will follow the calculation provided in the adherence sheet for each program. To support the utilization of the communication tool, the IP will count how many staff used the SBAR tool for communication during the project's duration.

The success of this project measurement depends on the accuracy of the analysis for adherence rates. Thus, thorough training of the infection control champion team and precise data collection will advance correct data recording. Hence, the most significant limitation of this approach is to influence the behavior of staff if they know that they are being observed.

Ethical Considerations

Hand hygiene and PPE use are fundamental ethical responsibilities of all healthcare staff in the nursing facility, especially during the COVID-19 pandemic. The intended quality improvement project for the facility unit proposes increasing compliance with infection-control policies for hand hygiene and PPE use and supporting nursing and ancillary staff in mitigating COVID-19 infection, which is a continuous threat to the health of residents and health care workers. The program will not impose direct and explicit penalties for non-compliant staff unless they are justified and staff actions have caused immediate actual harm to patients and colleagues. Moreover, the IP will coordinate with the facility management and provide awareness of IPC system failures as causes of adverse outcomes such as patient and staff safety.

The project's moral obligation is to "do no harm" (non-maleficence) to all residents and staff. Moreover, it is logical to require IPC practice standards from health care staff to protect residents and their colleagues from preventable harm by inhibiting transmission of COVID-19 in the facility. It's necessary to consider staff privacy issues when proposing and performing every observation. The importance of privacy issues is recognized by not including staff names written on the adherence tool. Each observation may lead to an internal bias of the observer, which deviates from accurate measures of the project's outcome. Therefore, all observers are compelled to understand the actual value of the project's aim by providing a clear definition of what to observe and training for individual self-awareness.

The Jesuit value that aligns with the quality improvement project is Cura Personalis, caring for everyone (University of San Francisco California, n.d.). Furthermore, encouraging staff to increase adherence to hand hygiene and PPE use requires understanding their beliefs and ethics to recognize the challenges in performing infection control practices while providing holistic care to the residents. Thus, promoting interpersonal skills by utilizing the SBAR tool to engage staff enhances appreciation and acceptance of project interventions and guides the team to recognize their ethical obligations.

The American Nurses Association Code of Ethics that guides the clinical nurse leader in provision three declares that the nurse should promote, advocate for, and protect the patient's rights, health, and safety (Weberg et al., 2019). Hence, these provisions preserve the professional behavior of nurses for ethical decision-making in advocating compliance of hand hygiene and PPE use, significant in promoting residents' safety to circumvent the threat of COVID-19 in the facility.

Results

Project intervention is the fundamental strategy in preventing and mitigating COVID-19 infection in a skilled nursing facility. Moreover, following excellent hand hygiene and proper use of required personal protective equipment (PPE) is one of the core elements in combating the transmission of SARS-COV2. Including communication strategies such as Situation-Background-Assessment-Recommendation (SBAR) will support improving infection control practices in aiding the successful outcome of the project's purpose. The quality improvement project was implemented for nine weeks in the chosen unit (Natalie Hall). Thus, the project result will determine the project's expansion on a larger scale in Herman Health Care Center.

Hand Hygiene Compliance

Before implementing the quality improvement project, the team leader conducted in-services to strengthen staff competency of hand hygiene. To measure staff skills check of hand hygiene, a return demonstration driven by the facility's infection control committee evaluated necessary experiences to meet the success of the aim of the project. There were 122 hand hygiene opportunities observed during the intervention, with the infection control champion leading the observation. Furthermore, a total of 102 successful hand hygiene opportunities were recorded out of 122 total observations. This data helps to identify if the development of the intervention is effective following the driver diagram of the quality improvement project. The adherence percentage was measured as Total # Hand Hygiene (HH) Successful ÷ Total # HH Opportunities Observed × 100. In the nine weeks, the adherence percentage ranged from 70% to 92%, with significant improvement to hand hygiene compliance compared to the previous facility hand hygiene performance with less than 70%.

However, during process implementation, the project encountered limitations that affected outcomes such as short staffing, onboarding of new employees assigned to the chosen unit, staff behavior toward compliance to hand hygiene, and staff awareness that they were being observed. These contextual elements were identified and reported during the meeting. The infection control committee proposed alternatives aligned to project intervention to ensure the accuracy of the measures.

Contact Precaution Compliance

Healthcare workers utilize PPE for protection from COVID-19 infection for droplets and contact transmission. During implementation, the project approaches the same process as it is similar to hand hygiene in increasing compliance percentage. The return demonstration helps develop staff confidence in PPE use, showing excellent donning and doffing compliance and mentoring colleagues recommended by the Centers for Disease Control and Prevention (CDC) when caring for patients with enhanced transmission-based precaution. The collected data shows that out of 183 contact precautions observations, there are 149 correct practices observed during the nine-week course of observation. Moreover, the PPE use adherence percentages range from 75 to 88%, which is an encouraging result and significant to the project's goal. The main factor limiting the project's adherence observation is when the chosen unit has no resident in contact precaution, enters as zero in the weekly data report (see Appendix N), and did not affect the overall result.

SBAR Tool

The project's adapted communication tool is SBAR, which is used to increase hand hygiene and PPE use, and it is a vital component of infection prevention and control practices to prevent

the string of transmission of COVID-19 infections. The team leader provided staff training on completing the SBAR form and its purpose to assist compliance in hand hygiene and PPE use. There are 49 total SBAR forms completed by the staff in communicating challenges, hurdles, and suggestions to improve the infection practices needed to increase adherence to hand hygiene and PPE use. Throughout implementation, the main concerns reported through SBAR are colleague behavior and competency, especially in donning and doffing of PPE. The team leader increased in-services concerning behavior modification toward the proposed change and created a cue card containing step-by-step instructions for donning and doffing of PPE. The SBAR tool assists the project in improving interventions based on the collected information from the project's team members. Moreover, it serves as an effective tool to enhance staff adherence to PPE use and hand hygiene in the chosen unit.

Discussion

Summary

COVID-19 is a global public health emergency that predominantly affects the long-term care facility, driving the increased mortality rate for residents, highlighting their vulnerability. Hand hygiene and personal protective equipment usage (PPE) are extensive practices to facilitate proper infection prevention and control (IPC) processes in the skilled nursing facility in the event of a pandemic. Moreover, building communication strategies to promote infection control compliance is needed in Herman Health Care Center to circumvent the spread of COVID-19 infection within the staff and residents.

The introduction of project intervention, such as selecting infection control champions who possess fundamental knowledge and skills in infection control practices, encourages their

colleagues to observe adherence to hand hygiene and PPE use. The project's strength is to contribute feedback to unit staff in maintaining the culture of mutual support at their highest performance. Utilizing the SBAR tool to maintain a reliable reporting method to identify hurdles and staff requests in improving compliance to hand hygiene and PPE use has a significant role in improving staff compliance. The team received training and competency checks to strengthen their skills to perform hand hygiene, donning, and doffing PPE at every opportunity. However, the infection control committee created and distributed a cue card to staff, including step-by-step instructions for donning and doffing PPE to reinforce and ensure competency during implementation.

The quality improvement project interventions significantly increased staff compliance to improve hand hygiene with 70-92% and PPE use from 78 to 85% in the chosen facility unit (see Appendix H). Moreover, an integrated theory of health behavior changes for involved staff supports the team's encouragement to express their beliefs about the projects during the implementation. This approach facilitates practicing wisdom and open communication within the group to modify staff behavior to maintain the project's aim. Moreover, adopting communication strategies such as the SBAR tool to promote infection control requirements ameliorates processes to standardize and build strong adherence to IPC practices among team members in mitigating a COVID-19 infection outbreak.

Conclusion

Communication is the lifeline of a functional organization and facilitates a coordinating instrument for teamwork (Agency for Healthcare Research and Quality, 2019). The QI project recognizes that communication and teamwork are fundamental processes in rendering quality

health care and facilitating patient safety. SBAR tool and facility staff collaboration can improve hand hygiene and the proper utilization of PPE required to circumvent the outbreak of COVID-19 in the facility.

The team advocates the project's sustainability by continuing staff adherence monitoring concerning hand hygiene and PPE use. Moreover, with available evidence from this QI project, the facility will utilize the project's framework and adopt the interventions to all other nursing units in Herman Health Care Center as it's beneficial to circumvent the transmission of COVID-19. Thus, the facility has zero COVID-19 cases from March to July—a valid representation of the success as the project's trademark is "My Health is in Your Hands."

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Appendix A

Evaluation Table

PICOT Question

How does (P) health care workers (I) employ communication strategies to (C) increase compliance for hand hygiene and PPE use to (O) reduce COVID-19 infection in Long Term Care Facility during the (T) time of pandemic?

Study	Design	Sample	Outcome/ Feasibility	Evidence Rating
Durso, F. T., Parmar, S., Heidish, R. S., Tordoya Henckell, S., Oncul, O. S., & Jacob, J. T. (2021). Improving the communication of hand hygiene procedures: Controlled observation, redesign, and randomized group comparisons. *Infection control and hospital epidemiology*, *42*(2), 194–202. https://doi.org/10.1017/ice.2020.407	Randomized Controlled Trial (RCT)	Phase 1: WHO Diagram with 30 participants. Phase 2: WHO Redesign Diagram with 30 participants. Note: World health Organization (WHO).	The researchers evaluate the evidence and effectiveness of the World Health Organization (WHO) hand-rub diagram. Moreover, researchers develop a modified version and compare the two diagrams. The WHO diagram revealed multiple shortfalls in hand-surface coverage during hand hygiene, including inadequate coverage with up to 75% of participants for the ulnar edge. Hence, the redesigned improve WHO diagram has adequate coverage of hand areas with 14 % of participants, compared with 7% for the WHO original diagram. The COVID-19 pandemic made a clear manifestation of the	I, A

			importance of hand hygiene. Moreover, WHO highlights hand hygiene as the most effective precautionary measure in preventing the spread of COVID-19 infection. Thus, the implementation of improved communication procedures and demonstrating the appropriate way to clean the hands of health care workers is vital not only in COVID-19 infection but also in preventing healthcare-associated infections.	
Houghton, C., Meskell, P., Delaney, H., Smalle, M., Glenton, C., Booth, A., Chan, X., Devane, D., & Biesty, L. M. (2020). Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *The Cochrane database of systematic reviews*, *4*(4), https://doi.org/10.1002/14651858.CD013582	Systematic Review (Qualitative evidence synthesis)	The authors of the research review the relevant context independently, using a prespecified sampling structure studies concerning healthcare workers towards factors that influence adhering to Infection Prevention and Control guidelines for respiratory infectious diseases. They examined 36 related studies and sampled 20 research subjects for analysis. Ten are from Asia, four from Central and North America, two	The Cochrane contributors investigated barriers and facilitators to healthcare workers' adherence to IPC guidelines, particularly in personal protective equipment (PPE) strategies. Moreover, these procedures can be complicated and time-consuming for healthcare workers to adhere to. The study asserted that the healthcare staff is subject to various factors that affect compliance with Infection Prevention and Control (IPC) guidelines when handling COVID-19 cases. Clear communication strategies for IPC guidelines are vital to increasing adherence to PPE procedures. Support from managers, a good workplace culture, and	III, A

		from Australia, and four from Africa.	the right training methods will increase adherence to the use of PPE.	
Kourkouta, L., & Papathanasiou, I. V. (2014). Communication in nursing practice. *Materia socio-medica*, *26*(1), 65–67. https://doi.org/10.5455/msm.2014.26.65-67	Expert Opinion	None	The experts suggest that communication is an essential component in every nursing process, be it in performing interventions, education, or health promotion. Moreover, the need to learn the many aspects and importance of communication in different nursing fields is essential in providing quality care.	V, B
Ong, M. S., Magrabi, F., Post, J., Morris, S., Westbrook, J., Wobcke, W., Calcroft, R., & Coiera, E. (2013). Communication interventions to improve adherence to infection control precautions: a randomised crossover trial. *BMC infectious diseases*, *13*, 72. https://doi.org/10.1186/1471-2334-13-72	Crossover Randomized Controlled Trial (RCT)	Three hundred transfers were observed for four months (38% of transfers involving an infectious patient). Moreover, 179 (60%) transfers involved a patient with MRSA or VRE. Two communication strategies performed, involving a pre-transfer checklist used by radiology transporters to verify a patient's infectious status and a colored cue to highlight written infectious status information.	In this study, interventions to improve communication during inpatient transfers within hospital departments were implemented to enhance compliance to infection control precautions. The control group adherence percentage was 38%. Utilizing the colored cue has a compliance rate of 73%, and the pre-transfer checklist intervention achieved an equivalent rate of 71% adherence. Moreover, if the two interventions utilized, the compliance rate attained 74%. The research emphasizes the value of effective communication in improving compliance with infection control precautions during care	I, B

			transition. Both interventions produce significant improvement in adhering to infection control precautions.	
Rios, P., Radhakrishnan, A., Williams, C., Ramkissoon, N., Pham, B., Cormack, G. V., Grossman, M. R., Muller, M. P., Straus, S. E., & Tricco, A. C. (2020). Preventing the transmission of COVID-19 and other coronaviruses in older adults aged 60 years and above living in long-term care: a rapid review. *Systematic reviews*, *9*(1), 218. https://doi.org/10.1186/s13643-020-01486-4	Clinical Practice Guidelines	Nine clinical practice guidelines (CPGs) were examined.	The COVID-19 pandemic became a public health crisis globally that mainly affects the long-term care facility, leading to the increased mortality rate for 60 years of age and above, highlighting the residents' vulnerability. Based on the study, among the nine clinical practice guidelines, the commonly suggested strategy in preventing facility outbreak of COVID 19 was implementing surveillance, and evaluation in long-term care facilities, supported by mandating PPE's use and promoting hand hygiene. Instituting good communication will provide adequate access to information needed in preventing and reducing the transmission of COVID-19.	IV, A
Verbeek, J. H., Rajamaki, B., Ijaz, S., Sauni, R., Toomey, E., Blackwood, B., Tikka, C., Ruotsalainen, J. H., & Kilinc Balci, F. S. (2020). Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff. *The Cochrane database of systematic reviews*, *4* (4). https://doi.org/10.1002/14651858.CD011621.pub4	Systematic Review	The researcher combined and appraised 24 studies with 2278 participants, of which 14 are randomized controlled trials (RCT), one quasi-RCT, and nine	Healthcare workers utilize personal protective equipment (PPE) to protect from COVID-19 infection from droplets and contact transmission. PPE may include gowns or coveralls, gloves, masks and breathing	III, A

		non-randomized designs. The researcher reviews the eight studies that differentiate the types of Personal Protective Equipment (PPE). Six studies assessed modified PPE. Eight studies examined donning and doffing processes, and three studies assessed types of training. Eighteen studies utilized simulated exposure with fluorescent markers to examine the effectiveness of PPE.	equipment (respirators), and face shield. PPE can decrease the risk by covering body parts that are exposed. The study is unclear which kind of PPE protects most reliable, the best donning and doffing method of PPE, and training to health care workers. The researchers suggest a more Randomized Controlled Trial concerning the training aspect for PPE and the effectiveness of simulation studies to determine which PPE and procedure protect best.	

Appendix B

HAND WASHING AND HAND HYGIENE COMPETENCY CHECKLIST

SKILLS	PASS	FAIL
Alcohol Based Hand Rub		
1) Apply dime sized amount (2-3 ml) of product		
into palms of dry hands		
2) Rub product into hands		
* Palm to Palm		
* Rub fingertips of each hand in opposite palm		
* Rub between each thumb clasped in opposite		
Palm		
* Rub back of each hand performing another		

task.DO NOT WIPE OFF		
HANDWASHING		
1) Wet hands under warm running water		
2) Apply soap and distribute over hands.		
3) Rub hands together for 15 seconds to		
create a good lather.		
* Palm to Palm		
* Rub fingers of each hand in opposite palm		
* Rub between & around fingers		
* Rub each thumb clasped in opposite hand		
* Rub back of each hand with opposite palm		
4) Rinse hand thoroughly under warm running water		
5) Pat hands dry with a paper towel		
6) Turn off faucet using a paper towel		

Employee Name and Signature **DATE**

Infection Preventionist or Preceptor **DATE**

Appendix C

PPE DONNING AND DOFFING COMPETENCY CHECKLIST

SKILLS	PASS	FAIL
PPE DONNING		
1) Apply PPE prior to entering resident room		
* Perform hand washing or hand hygiene		
* Put on long sleeve PPE with opening at the back		
* Tie neck and waist ties		
* Apply mask/respirator		
* Perform seal check (if N95 use) to ensure correct fit.		
* Apply eye protection		
* Apply gloves, pulling gloves up over gown cuffs		

DOFFING PPE		
GLOVES BEFORE LEAVING THE ROOM		
1) Remove gloves without touching outer glove area		
2) Discard used gloves in trash bin inside the room		
GOWN BEFORE *LEAVING RESIDENT ROOM*		
1) Untie neck ties first, then waist ties on the gown		
2) scoop fingers under cuff and pull cuff over hand.		
3) using the gown-covered hand, pull the gown down over the hand		
4) Pull the gown off without touching the outside		
5) Roll gown inside out		
6) Dispose of gown into the garbage or laundry hamper		
7) Perform hand hygiene		
EYE PROTECTION BEFORE *LEAVING RESIDENT ROOM*		
1) Take off eye protection using handles		
2) Place in reprocessing bin or trash bin		
MASK or N95 *RESPIRATOR BEFORE LEAVING THE ROOM (UNLESS DROPLET OR AIRBORNE)*		
1) Remove using loop or ties		
2) Do not touch mask or respirator		
3) Place into trash bin		
4) Perform hand hygiene		

_____ _____

Employee Name and Signature **DATE**

_____ _____

Infection preventionist or Preceptor **DATE**

Appendix D

Healthcare-Associated Infections Program Adherence Monitoring
Contact Precautions

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can maintain or improve adherence to contact precautions practices. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location where patients are on contact precautions.

Instructions: Observe 3-4 patients/residents on contact precautions. Observe each practice and check a box if adherent, Yes or No. In the column on the right, record the total number of "Yes" for adherent practices observed and the total number of observations ("Yes" + "No"). Calculate adherence percentage in the last row.

	Contact Precautions Practices	Contact Precautions Patient/Resident 1	Contact Precautions Patient/Resident 2	Contact Precautions Patient/Resident 3	Contact Precautions Patient/Resident 4	# Yes	# Observed
CP1.	Gloves and gowns are available and located near point of use.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP2.	Signs indicating the patient/resident is on contact precautions are clear and visible.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP3.	The patient/resident on contact precautions is housed in single-room or cohorted based on a clinical risk assessment.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP4.	Hand hygiene is performed before entering the patient/resident care environment.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP5.	Gloves and gowns are donned before entering the patient/resident care environment.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP6.	Gloves and gowns are removed and discarded, **and** hand hygiene is performed before leaving the patient/resident care environment. *Soap & water is used if it is hospital policy or if the patient/resident has C.difficile infection.*	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		
CP7.	Dedicated or disposable noncritical patient-care equipment (e.g. blood pressure cuffs) is used; if dedicated/disposable equipment is unavailable, then equipment is cleaned and disinfected prior to use on another patient/resident according to manufacturers' instructions.	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No		

# of Correct Practices Observed ("# Yes"): _____	Total # Contact Precautions Observations ("# Observed"): _____ (Up to 28 total) *If practice could not be observed (i.e. cell is blank), do not count in total # Observed.*	Adherence _____% (Total "# Yes" ÷ Total "# Observed" x 100)

Version 2016.10.12

Appendix E

Healthcare-Associated Infections Program Adherence Monitoring
Hand Hygiene

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can improve hand hygiene adherence. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location.

Instructions: Observe at least 10 hand hygiene (HH) opportunities per unit. Observe a staff member and record his/her discipline. Check the type of hand hygiene opportunity you are observing. Indicate if HH was performed. Record the total number of successful HH opportunities and calculate adherence.

HH Opportunity	Discipline	What type of HH opportunity was observed? (select/ ☑ 1 per line)	Was HH performed for opportunity observed? ✔ or Ø
Example	N	☐ before care/entering room* ☐ before task ☐ after body fluids ☐ after care* ☑ upon leaving room ***Remember**: Hand hygiene should be performed before and after glove use	✔
HH1.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH2.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH3.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH4.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH5.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH6.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH7.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH8.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH9.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH10.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

Disciplines:
CNA = Nurse Assistant
D = Dietary
N =Nurse
P = Physician
RT = Respiratory Therapist
S = Student
VIS = Visitor
VOL = Volunteer
W = Social Worker
OTH = Other, Specify
U = Unknown

Opportunities:
✔ = Opportunity Successful
Ø = Opportunity Missed

For HH1-HH10:

Total # HH Successful ("# ✔"): _____	Total # HH Opportunities Observed: _____	Adherence: _____% (Total # HH Successful ÷ Total HH Opportunities Observed x 100)

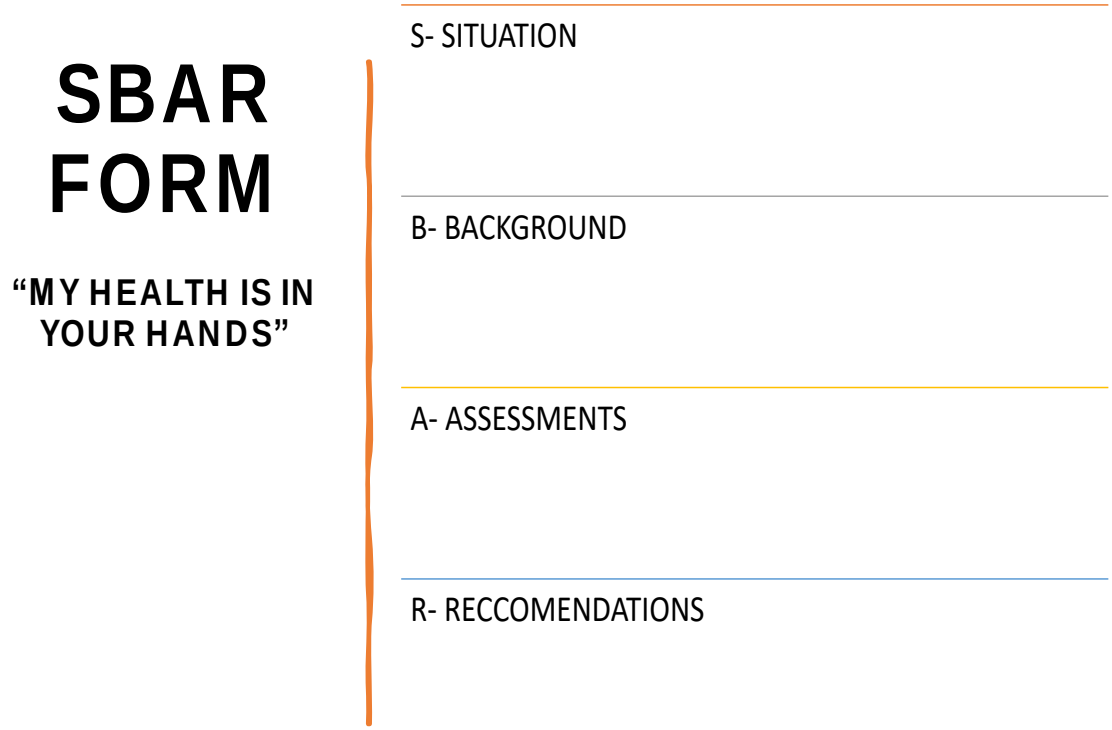
Version 2016.10.14

HH Opportunity	Discipline	What type of HH opportunity was observed? (select/ ☑ 1 per line)	Was HH performed for opportunity observed? ✔ or Ø
Example	N	☐ before care/entering room* ☐ before task ☐ after body fluids ☐ after care* ☑ upon leaving room ***Remember**: Hand hygiene should be performed before and after glove use	✔
HH11.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH12.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH13.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH14.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH15.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH16.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH17.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH18.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH19.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH20.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

Disciplines:	**P** = Physician	**VOL** = Volunteer	Opportunities:
CNA = Nurse Assistant	**RT** = Respiratory Therapist	**W** = Social Worker	✔ = Opportunity Successful
D = Dietary	**S** = Student	**OTH** = Other, Specify	Ø = Opportunity Missed
N =Nurse	**VIS** = Visitor	**U** = Unknown	

Is successful hand hygiene possible?	Yes/No; Comments
HHQ1. There is visible and easy access to hand washing sinks or hand sanitizer where most needed.	
HHQ2. There is a sufficient supply of soap at hand washing stations.	
HHQ3. There is a sufficient supply of paper towels at hand washing stations.	
HHQ4. There is sufficient supply of alcohol-based hand sanitizer (e.g. no empty containers).	

Appendix F



Appendix G

CNL Project: Statement of Non-Research Determination Form

Student Name: EZRA MACABIO

Title of Project: Communication Strategies to Promote Infection Control Compliance: My Health is in Your Hands

Brief Description of Project: COVID-19 is a global public health emergency that predominantly affects the long-term care facility, indicating the vulnerability for residents 60 years of age and above. Hand hygiene and personal protective equipment usage (PPE) are extensive practices to facilitate proper infection prevention and control (IPC)

practices within a healthcare facility in the pandemic. Based on the microsystem assessment, the facility has less than 70% adherence to hand hygiene, and some staff members do not comply with the use of required personal protective equipment. Auditing such practices with healthcare staff promotes the need for IPC areas that will require continuous improvement to promote patient and staff safety.

A) Aim Statement: The proposed project is to create strategies, standardizing communication by utilizing TeamSTEPPS' communication tool centered on clinical staff communication systems and teamwork following excellent infection control practices. Moreover, the specific project aims to adopt communication strategies, such as the SBAR tool, to improve hand hygiene adherence and PPE use from 70% to 100% compliance in the chosen facility unit.

B) Description of Intervention: Team staff will receive training regarding the purpose of SBAR and how to complete the form correctly, and team leaders will re-assess the involved staff competency checklist for hand hygiene and PPE donning and doffing. Moreover, the infection control committee will measure adherence to hand hygiene and PPE use. The infection control committee member will be utilizing the California Department of Public Health (CDPH), healthcare-associated infections program adherence monitoring for hand hygiene and contact precaution in every opportunity. The project team leader will conduct a weekly meeting with all staff involved in the project to discuss the significance of the Integrated Theory of Health Behavior Change (ITHBC), a framework that proposes behavior modification by combining knowledge and beliefs and improving social facilitation.

C) How will this intervention change practice? Facility staff education plays an essential role in advancing IPC policies and procedures and adhering to the national standard and evidence-based approaches to managing COVID-19 infection. Fostering TeamSTEPPS training programs and its core competencies that focus on clinical staff communication, leadership, situation monitoring, and mutual support will improve standardization and build strong IPC practices among team members. Moreover, increasing the compliance of hand hygiene and proper use of required personal protective equipment within the staff will help mitigate the transmission of COVID-19 infection in the facility.

D) Outcome measurements: Collecting data such as current facility hand hygiene and PPE usage adherence percentage will serve as a baseline to measure the project's progression. The project proposes to achieve 100% staff compliance with hand hygiene and PPE usage. Hence, staff participation is requisite to the success of the project's

trademark, " My Health is in Your Hands."

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used:
(http://answers.hhs.gov/ohrp/categories/1569)

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title: Communication Strategies to Promote Infection Control Compliance: My Health is in Your Hands	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**YES**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**YES**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**YES**	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The	**YES**	

project does **NOT** develop paradigms or untested methods or new untested standards.		
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**YES**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**YES**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**YES**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**YES**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: "*This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	**YES**	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): EZRA MACABIO

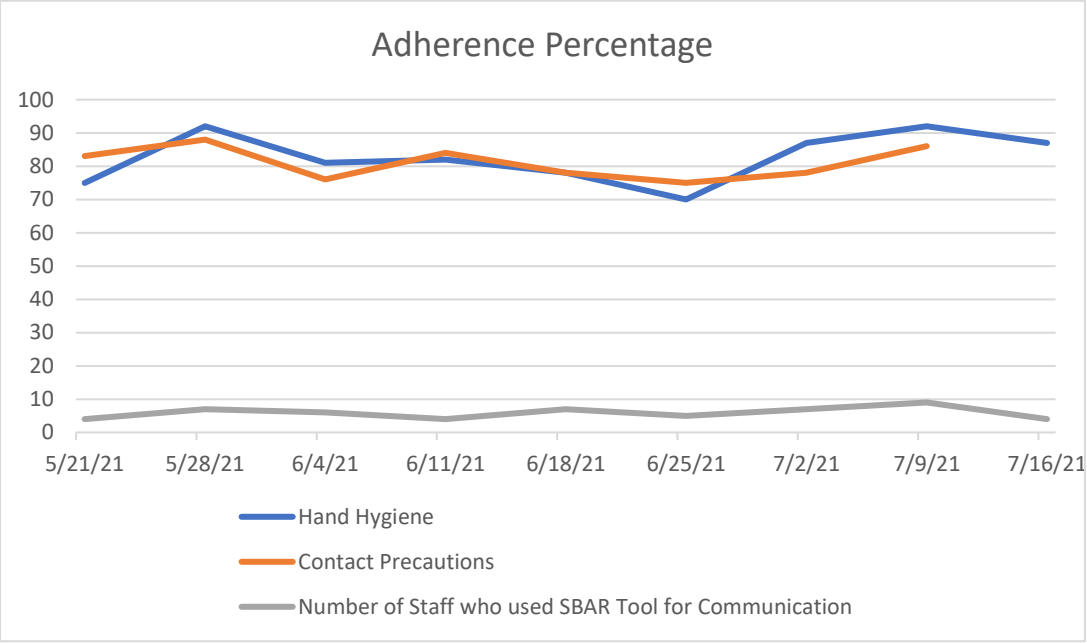
Signature of Student: Ezra Macabio **DATE: 04/14/2021**

SUPERVISING FACULTY MEMBER NAME (Please print):
_____

Signature of Supervising Faculty Member:
_____DATE_____

Appendix H

Line Chart



Appendix I

Project Charter

Title: Communication Strategies to Promote Infection Control Compliance: My Health is in Your Hands

Global aim: The global aim is to increase staff hand hygiene compliance and personal protective equipment (PPE) use in the chosen nursing unit in the skilled nursing facility. The project will adopt communication strategies such as the SBAR tool to standardize

compliance by utilizing the TeamSTEPPS tool centered on clinical staff communication and teamwork in following the excellent infection control needed to mitigate and prevent the transmission of the COVID-19 infection.

Specific Aim: The specific project aims are to improve staff hand hygiene adherence and PPE use from 70% to 100% in the chosen facility unit by the end of July 2021.

Background information/rationale for project: COVID-19 is a global public health crisis that predominantly affects long-term care facilities, indicating the vulnerability of residents 60 years of age and above with underlying diseases. Hand hygiene and PPE use are widespread practices to promote proper infection prevention and control (IPC) practices within the healthcare staff. The facility has less than 70% adherence to hand hygiene, and some staff members do not comply with the use of required personal protective equipment. Investigating these practices of the healthcare staff will reveal the IPC areas that will require continuous improvement to promote patient and staff safety.

According to Erasmus et al. (2009), healthcare staff was identified as the principal driver in hand hygiene, and the behavior of the staff influences these practices. While the proper use of PPE provides vital benefits to patients and staff, inappropriate use can significantly compromise patient and staff safety. Moreover, compliance is driven by peer influence and beliefs. According to Ryan (2009), the Integrated Theory of Health Behavior Change (ITHBC) framework suggests that behavior modification can enhance desired health conditions by combining knowledge and beliefs, building self-management skills and abilities, and improving social facilitation. Also, behavioral theories have a significant role in managing the impacts of an infectious public health emergency such as the COVID-19 pandemic.

Sponsors:

1. Skilled Nursing Facility Administrator
2. Infection Preventionist
3. Infection Preventionist Consultant
4. Director of Nursing

Goals for the project: This project intends to improve the communication concerning infection prevention and control (IPC) programs within the team, employing the TeamSTEPPS communication tool to improve hand hygiene adherence and PPE use. Utilizing SBAR will promote a better reporting system to identify hurdles in increasing compliance. The project goals are the following:

1. The interdisciplinary team will comply with and demonstrate the appropriate way of donning and doffing PPE, as recommended by the Centers for Disease Control

and Prevention (CDC) when caring for patients with confirmed or suspected COVID-19.
2. The team will understand the effect of hand hygiene compliance and proper use of required PPE in supporting enhanced COVID-19 transmission-based precautions in the skilled nursing facility.
3. According to the facility's COVID-19 staff skills checklist, the team will demonstrate hand hygiene techniques to advance the competency needed to standardize such practices in mitigating the spread of COVID-19 infection.
4. The members will adhere to hand hygiene and PPE usage at every opportunity and identify challenges by reporting to the project team leader utilizing the SBAR communication tool between the staff.
5. The team will acquire the confidence to perform hand hygiene and PPE compliance and coach colleagues by accurately following an excellent IPC program designed to break the chain of COVID-19 transmission in the facility.
6. The project's intervention programs will enhance complex infection control requirements to give holistic and comprehensive care in providing patient safety and quality care.

Measures:

Measure	**Data Source**	**Target**
Outcome		
Staff hand hygiene adherence percentage.	California Department of Public Health healthcare-associated infections (HAI) Program in Hand Hygiene Adherence Monitoring	100%
Staff adherence percentage of PPE use in contact precautions.	California Department of Public Health healthcare-associated infections (HAI) Program in Contact Precautions Adherence Monitoring	100%
Process		

Completing the SBAR tool in communicating critical information requires immediate action, such as hurdles in performing hand hygiene and PPE procedures.	SBAR form	20
The number of correct practices observed ("# Yes") in contact precautions monitoring.	California Department of Public Health healthcare-associated infections (HAI) Program in Contact Precautions Adherence Monitoring	Up to 28 in total
The total number of hand hygiene opportunities observed.	California Department of Public Health healthcare-associated infections (HAI) Program in Hand Hygiene Adherence Monitoring	At least 10-20 hand hygiene opportunities
The Total number of hand hygiene successful.	California Department of Public Health healthcare-associated infections (HAI) Program in Hand Hygiene Adherence Monitoring	At least 10-20 hand hygiene successful opportunities
The total number of contact precautions observations (“# Observed”).	California Department of Public Health healthcare-associated infections (HAI) Program in Contact Precautions Adherence Monitoring	Up to 28 totals
<u>Balancing</u>		
The total number of staff unsuccessful hand hygiene opportunities.	California Department of Public Health healthcare-associated infections (HAI)	0

	Program in Hand Hygiene Adherence Monitoring	
A number of “No” for contact precautions adherent practices observed.	California Department of Public Health healthcare-associated infections (HAI) Program in Contact Precautions Adherence Monitoring	0

Team members:

1. Nurses
2. Certified Nursing Assistants
3. Housekeeping staff
4. Physical Therapist
5. Occupational Therapist
6. Speech Therapist
7. Department Managers

Appendix J

Measurement Strategy

Population Criteria: The project's team comprises the nurses, certified nursing assistants (CNAs), therapists, housekeeping, and other staff providing resident care daily in the skilled nursing facility. The project team is identified as responsible for handling residents' complex conditions while performing hand hygiene and proper use of personal protective equipment in managing COVID-19 infection in the chosen facility unit. The project also encourages the participation of the residents and visitors while implementing the program but will not be included in the monitoring adherence tool as part of the project's limitation.

Data Collection Method: To measure adherence to hand hygiene and PPE use, the infection control committee member will be utilizing the California Department of Public Health (CDPH), healthcare-associated infections program adherence monitoring for hand hygiene and contact precaution in every opportunity. The committee will serve as the infection control champion to

observe the compliance of the involved staff in the nursing unit. Moreover, gathering data such as current facility hand hygiene and PPE usage adherence percentage will serve as a baseline to measure the project's progression. Infection control meeting minutes will be scheduled every Friday to monitor project outcomes and identify the barriers affecting meeting the desired goals. The compliance is monitored every week by installing a data wall that will help see the journey of the weekly and monthly metrics toward the target date's performance.

Data Definitions:

Data Element	Definition
California Department of Public Health healthcare-associated infections (HAI) program in contact precautions	Utilizing this program will assist in identifying gaps and opportunities for improvement of contact precaution practices (CDPH, 2021).
Contact Precautions Adherence Monitoring Tool	Observe 3-4 residents on contact precautions. Observe each contact precaution practice and mark a box of Yes or No if staff adhere. Record the total number of “Yes” for adherent practices observed and the total number of observations. Calculate adherence percentage to determine overall staff compliance.
Contact precautions correct practices observed	The representation of the successful practice of staff in adhering to contact precaution program.
Contact precautions adherence percentage	The measurement of the proportion of staff adherence to contact precaution practices by calculating the total number of "Yes" and divide the total number observed x 100.
California Department of Public Health healthcare-associated infections (HAI) program in hand hygiene	Utilizing this program with constant monitoring and reporting of outcomes to staff can increase hand hygiene adherence. (CDPH, 2021).

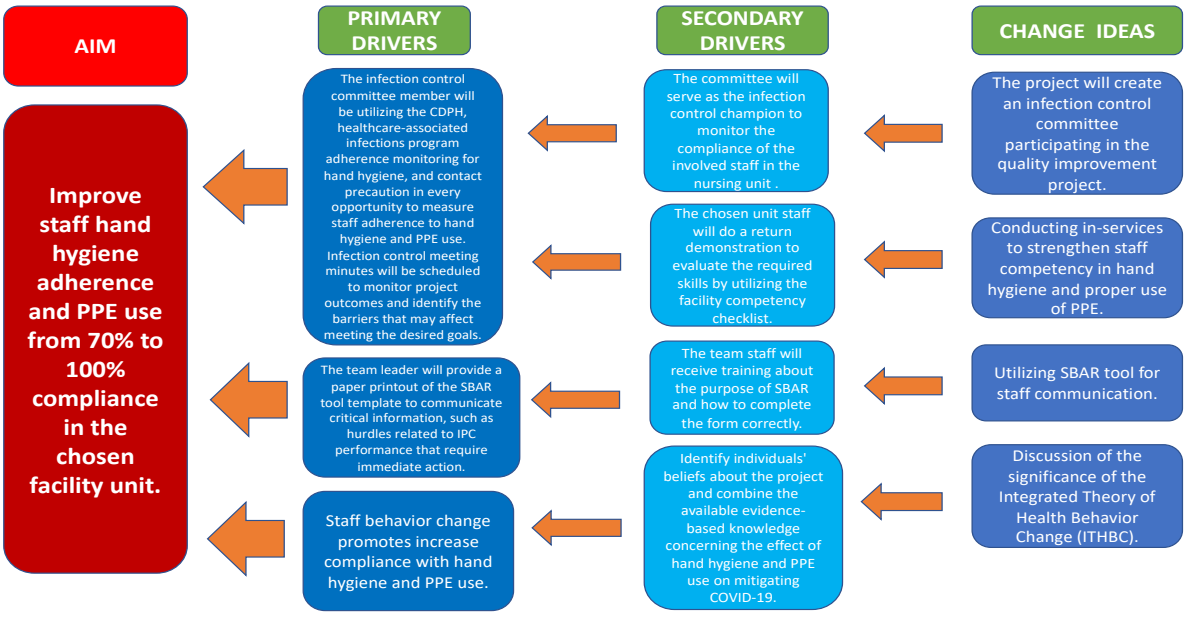
Hand hygiene adherence monitoring tool	The tool requires observation of at least ten hand hygiene opportunities of the unit. Observe a staff member and record the discipline. Record the total number of successful hand hygiene opportunities and calculate adherence.
Hand hygiene opportunities	The observer's viewpoint in the event in which the staff needs to perform hand hygiene, necessary to measure compliance
Hand hygiene successful	A practice in which staff demonstrates hand hygiene skills completely in all opportunities.
Hand hygiene adherence percentage	The measurement of the staff adherence to hand hygiene practices by calculating the total number of hand hygiene successful and divide the total number observed x 100.
Infection control champion rounds	*Infection control champions* are recognized individuals with excellent communication skills responsible for monitoring compliance in hand hygiene and PPE use of the involved staff in the nursing unit.
SBAR tool staff communication report	A communication tool will support a reliable reporting system to identify hurdles in increasing compliance.
COVID-19 facility staff skills checklist	SBAR communication tool will support a reliable reporting system to identify hurdles in increasing compliance.

Measure Descriptions:

Measure	Measure Definition	Data Collection Source	Goal
A percentage of staff adherence to PPE use in contact precautions in the unit.	N = Number of correct practices observed D= Total Number of contact precautions observations	California Department of Public Health healthcare-associated infections (HAI) Program in Contact Precautions Adherence Monitoring	100%
A percentage of staff adherence to Hand hygiene in the unit.	N = Number of hand hygiene "opportunity successful." D= Total number of hand hygiene opportunities observed	California Department of Public Health healthcare-associated infections (HAI) Program in Hand Hygiene Adherence Monitoring	100%
Number of staff who used SBAR tool for communication	N = Number of staff employed SBAR as a communication tool D= Total number staff in the chosen unit	SBAR form	20

Appendix K

Driver Diagram



Appendix L

Changes to Test

The changes implemented in the chosen skilled nursing facility unit will perform changes to increase the staff adherence to hand hygiene and PPE use by promoting the following:

1.) Building infection control champions—The project's monitoring for staff adherence to hand hygiene and PPE use will be primarily observed by the infection control champions. The dedicated team possesses fundamental knowledge and skills in infection control practices to support the colleagues during the project's implementation. Moreover, infection control champions will promote the adherence of hand hygiene and PPE use by auditing and provide feedbacks to unit staff in maintaining the culture of mutual support at their highest performance.

2.) Utilizing the SBAR tool—The team will use the SBAR tool to support a reliable reporting method to identify hurdles and staff requests in improving compliance to hand hygiene and PPE use.

3.) Hand hygiene and PPE use in-services—The team will receive training and competency check to strengthen their skills needed to perform hand hygiene and donning and doffing of PPE at every opportunity.

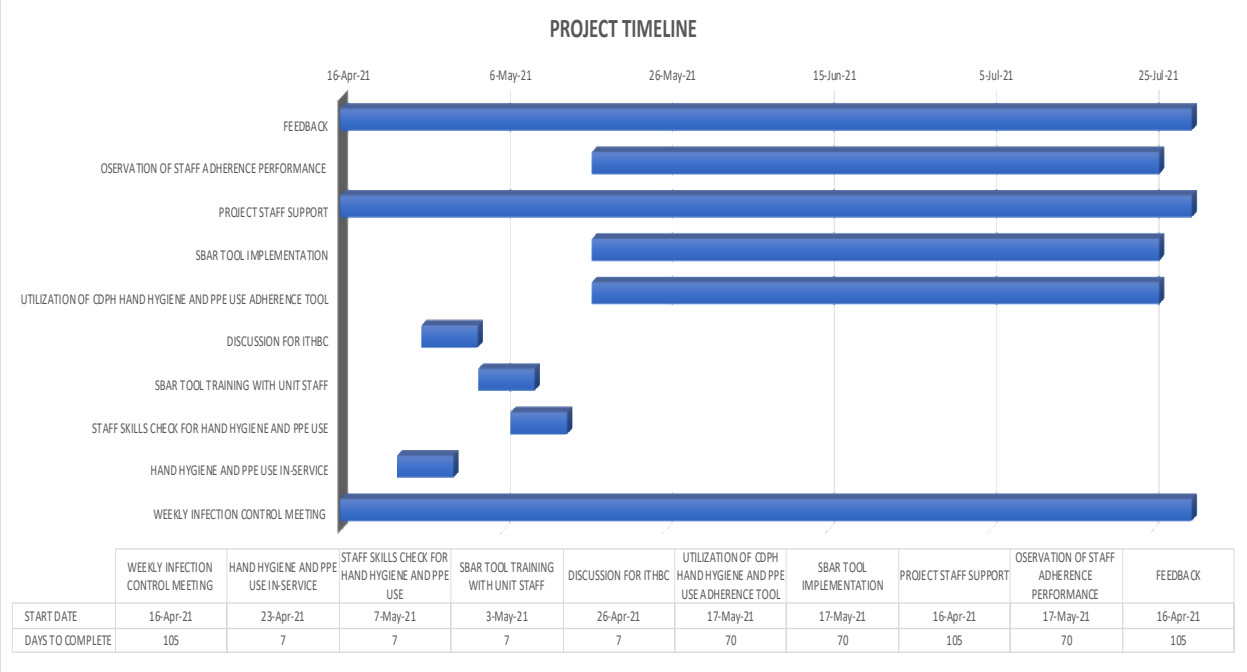
4.) An integrated theory of health behavior changes for involved staff—The team are encouraged to express their beliefs about the projects during the meeting. This approach will assist practice wisdom and open communication within the team to facilitate staff behavior modification.

The CNL will begin by evaluating the current compliance percentage of adherence monitoring for hand hygiene and PPE use in the chosen unit. Afterward, the CNL will present the proposed project to the quality assurance and performance improvement team and director of nursing for approval. Granting that the project was approved, the CNL will introduce to unit staff involved in the proposed project. The CNL will explain the goal and benefits of the change to the team by recognizing the importance of compliance in hand hygiene and PPE used in providing patient safety and quality care, as well as staff safety while performing the infection control core elements needed in mitigating the transmission of COVID-19. The CNL will announce and choose an individual to become an infection control champion. Moreover, all staff involved in the project must evaluate competency skills to ensure excellent performance needed in the proposed change.

The infection control champion will reinforce the change by observing staff adherence weekly. The CNL will introduce the SBAR communication tool and discussion of behavior modification to the project team staff to maintain the stability of the changes. Lastly, to assess the effectiveness of the changes, the CNL will analyze the data from the CDPH HAI adherence tool for hand hygiene and usage of PPE by calculating the adherence percentage weekly. By comparing weekly data, the CNL will examine the project's progression in determining the success of the test of change.

Appendix M

Gantt chart



	WEEKLY INFECTION CONTROL MEETING	HAND HYGIENE AND PPE USE IN-SERVICE	STAFF SKILLS CHECK FOR HAND HYGIENE AND PPE USE	SBAR TOOL TRAINING WITH UNIT STAFF	DISCUSSION FOR ITHBC	UTILIZATION OF CDPH HAND HYGIENE AND PPE USE ADHERENCE TOOL	SBAR TOOL IMPLEMENTATION	PROJECT STAFF SUPPORT	OSERVATION OF STAFF ADHERENCE PERFORMANCE	FEEDBACK
START DATE	16-Apr-21	23-Apr-21	7-May-21	3-May-21	26-Apr-21	17-May-21	17-May-21	16-Apr-21	17-May-21	16-Apr-21
DAYS TO COMPLETE	105	7	7	7	7	70	70	105	70	105

Appendix N

WEEKLY DATA REPORT				
Date	**Hand Hygiene Adherence Percentage**	**Contact Precautions Adherence Percentage**	**Number of Staff who used SBAR Tool for Communication**	**Comments**
05/21/2021	Total # HH Successful: **9** Total # HH Opportunities Observed: **12** Adherence: **75%** (Total # HH Successful ÷	# Of Correct Practices Observed ("# of YES"): **20** Total # Contact Precautions Observation (Up to 28 Total): **24**	Number of staff employed SBAR: **4**	

	Total # HH Opportunities Observed **X** 100)	Adherence: **83%** Total "# Yes" ÷ Total "# Observed" **X** 100)		
05/28/2021	Total # HH Successful: **12** Total # HH Opportunities Observed: **13** Adherence: **92%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **16** Total # Contact Precautions Observation (Up to 28 Total): **18** Adherence: **88%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **7**	
06/04/2021	Total # HH Successful: **9** Total # HH Opportunities Observed: **11** Adherence: **81%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **20** Total # Contact Precautions Observation (Up to 28 Total): **26** Adherence: **76%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **6**	
06/11/2021	Total # HH Successful: **14**	# Of Correct Practices Observed ("# of YES"): **22**	Number of staff employed SBAR: **4**	

	Total # HH Opportunities Observed: **17** Adherence: **82%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	Total # Contact Precautions Observation (Up to 28 Total): **26** Adherence: **84%** Total "# Yes" ÷ Total "# Observed" **X** 100)		
06/18/2021	Total # HH Successful: **11** Total # HH Opportunities Observed: **14** Adherence: **78%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **18** Total # Contact Precautions Observation (Up to 28 Total): **23** Adherence: **78%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **7**	
06/25/2021	Total # HH Successful: **7** Total # HH Opportunities Observed: **10** Adherence: **70%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **18** Total # Contact Precautions Observation (Up to 28 Total): **24** Adherence: **75%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **5**	

07/02/2021	Total # HH Successful: **14** Total # HH Opportunities Observed:**16** Adherence: **87%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **15** Total # Contact Precautions Observation (Up to 28 Total): **19** Adherence: **78%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **7**	
07/09/2021	Total # HH Successful: **12** Total # HH Opportunities Observed: **13** Adherence: **92%** (Total # HH Successful ÷ Total # HH Opportunities Observed **X** 100)	# Of Correct Practices Observed ("# of YES"): **20** Total # Contact Precautions Observation (Up to 28 Total): **23** Adherence: **86%** Total "# Yes" ÷ Total "# Observed" **X** 100)	Number of staff employed SBAR: **9**	
07/16/2021	Total # HH Successful: **14** Total # HH Opportunities Observed: **16** Adherence: **87%** (Total # HH Successful ÷ Total # HH	# Of Correct Practices Observed ("# of YES"): **0** Total # Contact Precautions Observation (Up to 28 Total): **0** Adherence: **0**	Number of staff employed SBAR: **4**	No resident is on contact precaution to be observed.

	Opportunities Observed **X** 100)	Total "# Yes" ÷ Total "# Observed" **X** 100)		

Appendix O

CNL Competencies

The principal role of the Clinical Nurse Leader (CNL) in the proposed quality improvement project is System Analyst. The CNL will review the facility's communication system and create strategies by standardizing the communication pattern to improve connection and interaction between the project team staff and enhance care quality and patient safety. During the project implementation, the CNL will function as an educator, promoting the culture of learning among staff and providing the right tools and training to improve such a system and develop communication in the aspect of infection control practices.

Hence, as a lifelong learner, the CNL recognizes the importance of continuing education towards organizing strategies to drive infection control improvements for change. Moreover, one of the trademarks of this role is to build relationships within the team, specifically when handling conflicts during project application by communicating positively to their colleagues. Facilitating meaningful improvement will help identify gaps and break down barriers to effective communication in improving adherence to hand hygiene and PPE usage, essential aspects to strengthen infection prevention and control practices of health professionals during the COVID-19 pandemic.